

CLAIMS

What is claimed is:

1. A method of making a radiation shielding circuit device, comprising:

coupling an ionizing radiation shielding top to a side wall, said side wall being coupled to a base, said base having an electronic circuit device coupled thereto; and

positioning an ionizing radiation shield on said base opposite the electronic circuit device from the ionizing shielding top;

wherein the ionizing radiation shielding top and the ionizing radiation shield together shield the electronic circuit device from ionizing radiation;

wherein the radiation shielding top and the ionizing radiation shield each comprises a high Z material and a low Z material;

wherein the thicknesses of the radiation shielding top and the ionizing radiation shield are such that the electronic circuit device receives an amount of ionizing radiation less than a total dose tolerance for the electronic circuit device; and

wherein said low Z material comprises at least one of aluminum, silicon and copper.

2. The method of Claim 1, further comprising:

coupling an inner ionizing radiation shielding wall to said base, said inner ionizing radiation shielding wall substantially surrounds said electronic device.

3. The method of Claim 1, wherein said step of positioning an ionizing radiation shield includes juxtaposing said ionizing radiation shield against an outer surface of the base.

4. A method of making a radiation shielding circuit device, comprising:

coupling an ionizing radiation shielding top to a side wall, said side wall being coupled to a base, said base having an electronic circuit device coupled thereto; and

coupling an ionizing radiation shielding bottom to said base opposite;

wherein the ionizing radiation shielding top and the ionizing radiation shielding bottom shield the electronic circuit device from ionizing radiation and comprise a high Z material and a low Z material;

wherein the shielding of the electronic circuit device comprises a thickness such that the electronic circuit device receives an amount of ionizing radiation less than a total dose tolerance for the electronic circuit device; and

wherein said low Z material comprises at least one of aluminum, silicon and copper.

5. The method of Claim 4, further comprising:

coupling an inner ionizing radiation shielding wall to said base.

6. The method of Claim 5, wherein said step of coupling an inner ionizing radiation shielding wall includes coupling said inner ionizing radiation shielding wall to an interior surface of said base.

7. The method of Claim 4, wherein said step of coupling an ionizing radiation shielding bottom includes juxtaposing said ionizing radiation shielding bottom against an outer surface of the base.

8. The method of Claim 4, wherein said base comprises a ceramic.

9. The method of Claim 5, wherein said ionizing radiation shielding top comprises copper tungsten alloy, and further wherein said ionizing radiation shielding bottom comprises copper tungsten alloy.

10. The method of Claim 9, wherein said ionizing radiation shielding top comprises between about 80% and about 90% tungsten, by weight.

11. The method of Claim 9, wherein said ionizing radiation shielding top comprises between about 10% and about 20% copper, by weight.

12. The method of Claim 4, wherein said ionizing radiation shielding top comprises tantalum, and further wherein said ionizing radiation shielding bottom comprises tantalum.

13. The method of Claim 4, wherein said ionizing radiation shielding bottom is sized to be larger than said electronic circuit device.

14. The method of Claim 4, wherein said side wall comprises a ceramic.

15. The method of Claim 4, wherein said ionizing radiation shielding top comprises copper tungsten alloy, and further wherein said ionizing radiation shielding bottom comprises copper tungsten alloy.

16. The method of Claim 4, wherein said ionizing radiation shielding top comprises tantalum, and further wherein said ionizing radiation shielding bottom comprises tantalum.

17. A method of making a radiation shielding circuit device, comprising:

coupling an ionizing radiation shielding top to a side wall, said side wall being coupled to a base, said base having an electronic circuit device coupled thereto;

positioning an inner ionizing radiation shielding wall around said electronic circuit device; and

coupling an ionizing radiation shield to said base opposite the electronic circuit device from the ionizing shielding top, said ionizing radiation shield being juxtaposed against an outer surface of the base;

wherein the ionizing radiation shielding top, the inner ionizing radiation shielding wall and the ionizing radiation shield together shield the electronic circuit device from ionizing radiation;

wherein the radiation shielding top, the inner ionizing radiation shielding wall and the ionizing radiation shield each comprises a high Z material and a low Z material;

wherein the thicknesses of the radiation shielding top, the inner ionizing radiation shielding wall and the ionizing radiation shield are such that the electronic circuit device receives an amount of ionizing radiation less than a total dose tolerance for the electronic circuit device.